The IT Ramifications of the Era of Accountability

John Glaser, PhD, CEO
Health Services, Siemens Healthcare

New Reimbursement Models

Accountable Payment Models

<table>
<thead>
<tr>
<th>Performance Risk</th>
<th>Utilization Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of Care</td>
<td>Volume of Care</td>
</tr>
<tr>
<td>Quality of Care</td>
<td></td>
</tr>
</tbody>
</table>

- **Bundled Pricing**
  - Bundled Payments for Care Improvement programs
  - Commercial bundled contracts

- **Pay-for-Performance**
  - Value-Based Purchasing
  - Readmissions penalties
  - Quality-based commercial contracts

- **Shared Savings**
  - Medicare Shared Savings Program
  - Pioneer ACO Program
  - Commercial ACO contracts

Source: Financial Leadership Council interviews and analysis.
The Majority of an Average Provider’s Revenue Will likely Be Risk-Based in 10 Years

Provider Estimates of Future Revenue Breakdowns

Widening Reach of ACOs

Source: Leavitt Partners Center for Accountable Care Intelligence

Accountable Care Organization Expansion

Complex and Poorly Performing Care Processes Must Be Improved

Less than 50% of elderly patients are up to date on clinical preventive services

Elderly patients with comorbidities require up to 19 medication doses daily

Every year, the average elderly patient sees 7 doctors across 4 practices

Specialties
Primary Care

RNs
MDs
Allied Health

Average surgery patient is seen by 27 different health care providers

1 out of 5 elderly patients are readmitted within 30 days

Less than half of non-surgical patients follow-up with their primary care provider after discharge

Source: Best Care at Lower Cost; September 2012 Institute of Medicine; Smith, M Study Chair

A Significant Shift in the Healthcare Business Model Is Underway

Individual care providers
Treating individuals when they get sick
Emphasizing volumes
Maximizing the use of resources & assets
Offering care at centralized facilities
Treating all patients the same
Avoiding the sickest chronic patients
Being responsible for those who seek our services
Best efforts

Collaborative teams of providers
Keeping groups of people healthy
Emphasizing outcomes
Applying appropriate levels of care at the right place
Offering care at sites convenient to patients
Customizing healthcare for each patient
Creating venues to provide special chronic care services
Being responsible for the needs of the community
High reliability organizations
The Expanding Role of IT

It Is Not Possible to Address the Challenges ahead without a Foundation of Sophisticated IT

Today’s providers are taking on risk arrangements and need to proactively manage the care and wellness of their patient population by:

- Managing care over a continuum
- Managing the health of populations and individuals
- Supporting care teams with evidence-based processes and advanced analytics
- Engaging patients (and their families) to take the necessary steps to improve their health
- Improving the efficiency and effectiveness of core operations
- Managing the growing complexity of the revenue cycle

And providers must accomplish all of this across an ecosystem with multiple IT systems.
Healthcare Executives Increasingly Reliant on HIT to Manage New Care and Business Models

Core Information Technology Components Will Be Required

- An electronic health record that spans the continuum of care
- A revenue cycle and contracts management application that spans the continuum of care
- Sophisticated business intelligence and analytics
- Systems that enable interoperability between closely affiliated providers
- Technologies that support the engagement of patients
Material Changes in Business Models, Technologies and/or Environment Lead to Significant Changes in an Industry’s Core IT Platforms

<table>
<thead>
<tr>
<th>Category</th>
<th>Change</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail</td>
<td>World Wide Web</td>
<td>Web-based product review, comparison and ordering</td>
</tr>
<tr>
<td>Banking</td>
<td>Deregulation</td>
<td>Funds Management</td>
</tr>
<tr>
<td>Content Distribution</td>
<td>World Wide Web</td>
<td>Music ecosystems; Free news; Craigslist</td>
</tr>
<tr>
<td>Shipping</td>
<td>GPS; Bar codes; Handheld devices</td>
<td>Real time package tracking</td>
</tr>
</tbody>
</table>

Three Categories of Fundamental Change in Information Technology Will Be Experienced

- Move from Transaction-based to Intelligence-based systems
- Manage Accountable Care Processes
- Leverage “Fifth IT Revolution”
For Many Years, the Core Focus Has Been the Transaction

Transactions include:
- Writing a prescription
- Retrieving results
- Documenting a visit
- Processing costs

This focus addressed the core challenges:
- The serial treatment of patients (outpatient)
- The coordination of diagnostic and treatment activities (inpatient care)

The care setting emphasized:
- Transaction speed and efficiency
- Ease of use
- Good coverage of care diversity

The benefits were the reduction in transaction problems:
- Legibility
- Medication errors
- Documentation completeness
- Reimbursement accuracy

The Emphasis Will Shift From Transaction Support to Include Intelligence Support – Core Objectives

- Guide clinical diagnostic and therapeutic decisions
- Ensure sequence of care activities conform to the evidence and performance contract requirements
- Monitor the execution of core clinical, revenue cycle and administrative processes
- Capture, report and integrate into EHRs quality and performance measures
- Support the interactions of teams
**Stroke Workflow**

1. The nurse initiates the hospital's stroke protocol. Notification sent to physician.
2. Symptom present 45 minutes prior.
3. Care team initiates orders. Labs are drawn and patient sent for CT.
4. Doctor's evaluation confirms stroke.
5. Clinicals displays order set.
6. Physician verifies and signs off.
7. Notification sent to radiology manager. Stat CT not ordered within timeframe.
8. Physician is notified that CT and lab results are available; reviews results and suggests orders; orders stat TPA.
9. Radiology manager notifies tech. CT is completed.
10. Patient is transferred to ICU.
Intelligence will Need to Permeate Revenue Cycle Processes

Business, payer, and contract rules are applied to the claim; missing and incorrect data are fixed.
Administrative claim errors are identified and corrected.
Expected reimbursement and patient responsibility are calculated.

Machine Reconciliation of Data Inconsistencies

- Smoker
- Smoke counseling
- Aspirin on arrival
- On clinical trial X
- Contraindication to A
- Allergy to B
- Exercise daily
- LEBB
- Discharged on A
- Instructions at discharge
Three Categories of Fundamental Change in Information Technology Will Be Experienced

- Move from Transaction-based to Intelligence-based systems
- Manage Accountable Care Processes
- Leverage “Fifth IT Revolution”

Accountable Care Management Processes

The key is managing the care plan of the individual and stepping back and looking at the population in aggregate.

Populations will include those that are at readmission risk; undergoing a procedure bundle or have a chronic disease.
Determine Variation from Plan: Readmissions Dashboard

Concurrent Quality Intelligence: Cohort Monitoring
Care Management Will Be Key in the Context of Outcomes Orientation

The Care Management Solution can:

- Alert case managers of patient non-compliance with medications and specialist visits
- Provide patients with information about gaps in their health maintenance and disease management plans
- Enable population managers to identify patterns of care that lead to superior outcomes

Three Categories of Fundamental Change in Information Technology Will Be Experienced

- Move from Transaction-based to Intelligence-based systems
- Manage Accountable Care Processes
- Leverage “Fifth IT Revolution”
Characteristics of this Era

The era is characterized by:

- Networked, powerful processors almost everywhere and on almost anything
- Diverse array of sensitive and specific “sensors”
- Massive amounts of data and novel methods for analyzing it
- Software delivered as a service
- A wide variety of collaboration, community and knowledge resources

This era will enable us to:

- Use large data volumes to perform “real world” analysis and experiments
- Orchestrate complex processes
- Deliver new services, e.g., location aware and location invariant services
- Extend and enrich fundamental human activities such as being a member of a community and searching for information

Comparison of Relative Risk of Medications Using EHR Data

Managing Chronic Disease

The Building Blocks: Next Generation Accountable Care IT Platform

Source: AHA Center for Healthcare Governance
HIT Systems for the Future

- Support collaboration
  - Inter-disciplinary and multi-disciplinary teams
  - Shared worklists

- Enable personalized care
  - Treatment decision support
  - Predictive models
  - Intelligent order sets and documentation templates

- Enables reliable processes
  - Workflow engine
  - Health information exchange

- Manage populations
  - Disease registries
  - Referral management

- Provides introspection
  - Guideline adherence assessment
  - Quality measures capture and real time display
  - Financial optimization analyses

Questions